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## 1 Subject of specification

This specification used in conjunction with other technical specifications of LOTOS Group S.A., defines, on the grounds of regulations currently in force, requirements of approving body (GUM - Central Office of Measures / notified body), regarding documentation, execution and acceptance of weighing systems, as well as loading equipment and measuring lines destined for commercial settlements.

## 2 Scope of validity

This specification shall be used when preparing both quotations and Purchase Orders concerning planned LOTOS Group S.A. new investments and modernizations.

It shall also be a base for preparation of other detailed specifications and quotations relevant for package units or other equipment deliveries.

### 2.1 Deviations

Any deviation from this specification and the relevant specifications, standards and related documents including proposals, which the bidder claims to be economically and / or technically superior solutions, must be submitted in writing for review and approval by Grupa LOTOS SA. Non-approved exceptions are not acceptable by Grupa Lotos S.A.

The supplier must report in writing any ambiguity in this or any other specifications of Grupa LOTOS SA or non-compliance with the referred documents / standards and obtain a written explanation from Grupa Lotos SA.

## 3 Hierarchy of documents

In case of conflicts existing between this specification and other documents, the following order of precedence shall govern:

- The current Polish legislation
- Terms of purchase order / contract and other requirements agreed in writing with GLSA
- Data Sheets approved by GLSA
- This specification
- Other Specifications
- Drawings and other documents
- Standards

## 4 Definitions and designations

**GLSA** – Grupa Lotos S. A.

PLC - Programmable Logic Controller

UPS – Uninterruptible Power Supply

OIML – International Organization of Legal Metrology

# 5 Description

## 5.1 Loading measuring systems

The following requirements contain shortened information based on Minister of Economy, Labour and Social Policy order of 2 April 2004. All requirements, related to measuring lines and their elements included in this order, shall be exactly observed on designing, approving and implementing stages. The definitions being used in the order indicate:

**Measuring system** – measuring instruments consisting of meter and auxiliary devices, destined for measurements of volume or mass of flowing liquids other than water, and in particular petroleum, petroleum products, liquid gases, etc.

**Measuring meter –** measuring instrument, destined for continuous measurement, storing and presenting of flowing liquid volume or mass.

**Secondary devices –** set of electronic measuring instruments, together with auxiliary devices, providing presentation, printing and storing of liquid amount destined for turnover.

**Resolver –** measuring instrument, destined for automatic recalculation of flowing liquid volume, determined in measurement conditions, to volume in reference conditions or mass, with consideration given to physical properties of measured liquid.

**Measuring system with empty hose –** the measuring system, in which reference level is located upstream the discharge hose.

**Measuring system with full hose -** the measuring system, in which reference level is determined by means of closing device, located on the end of discharge pipe.

**Proofing device –** the device included in measuring system, serving for defects detection and recording.

**Electronic measuring system –** the measuring system that is equipped with electronic instruments.

**Degasifier –** gas elimination device, serving for carrying away of air or gases present in liquid, in continuous manner

**Metering valve –** the valve of adequate design, cooperating with meter, serving for starting of loading, and then its termination.

**Filter –** a device located upstream the meter, trapping solid contaminations.

5.1.1 Metrological requirements in scope of design and execution

The main element of measuring systems is **measuring meter**, destined for continuous measurement, storing and presentation of flowing liquid volume or mass. Important element of the meter is resolver. Measuring meter installed in measuring system shall be equipped with filter, serving for trapping of solid contaminations present in the liquid. Ratio of maximum measured value of volume stream to minimum measured value of volume stream shall amount at least 5 for liquid gases and cryogenic liquids, and 10 for the other liquids. The following designations shall be durably and legibly put on measuring system or meter:

1. CE mark with additional metrological maring (Dz. U. 2007 nr 3 poz. 27 Paragraph 4)
2. mark of type approval
3. producer brand or name

4. factory mark and number, as well as year of production
5. full catalogue number
6. cyclic volume for volume meters
7. maximum volume or mass stream and minimum stream of volume or mass
8. maximum operating pressure
9. operating temperature range
10. type of liquid, its density, viscosity, freezing point
11. name or designation of unit, in which volume or mass is expressed
12. minimum dose value
13. liquid flow direction shall be marked on enclosure of meter
14. ATEX mark, in justified cases.

**The resolvers** shall be equipped with device indicating volume of liquid in reference conditions, or indicating mass of liquid. Cooperating measuring instruments, necessary for volume of liquid determination in reference conditions, shall be installed next to measuring transducer in such a way, that magnitude determination for values characterizing properties of liquid which volume is being measured, would be performed with such accuracy, so that absolute value of volume indication change related to location of measuring point would not exceed 0.2 per cent of allowable limiting error absolute value (0.5 for railway and truck tanks' loading systems, and 1.0 for liquid gas systems).

The resolver shall provide possibility for presentation of measured values magnitudes in reference conditions and in measurement conditions – separately for each proofing measurement (testing).

Error of cooperating measuring instruments indications, particularly of temperature meters, density meters, and manometers, shall not exceed allowable limit errors, which are specified in Annex N$^{o}$ 2 to the Order.

Depending on needs, the following additional devices can be included in **measuring systems**:

1. gas elimination devices
2. density measuring device
3. sight-vane or sight-glass
4. check valve
5. device providing reference level
6. filter
7. pump
8. anti-vortex device
9. condensate tank
10. cut-off valve
11. equipment (tanks, pumps, batching and measuring devices), connected with batching of additives to loading line.

Measuring system shall be designed in such a way, so that during its normal operation introduction of air to measured liquid or releasing of gas from it upstream the measuring meter would be precluded.

If this requirement cannot be met, then measuring system shall be equipped with gas separator installed upstream the meter, provided with self-acting device carrying away gaseous phase.

The meter and pipelines located between it and reference level, shall remain filled with liquid during measurements and during work breaks.

Change of liquid volume, contained between the meter and reference level and resulting from temperature changes, cannot cause additional measuring error exceeding 1% of minimum measured value.

Downstream the meter a device can be located serving for pressure stabilization, which maintains pressure higher than atmospheric pressure and higher than saturated vapour pressure in gas elimination devices and in meter.

Vapour suction systems used in measuring systems for petroleum derivative liquids, shall not influence error value of measuring system.

5.1.2 Metrological characteristics of measuring systems

Measuring systems for loading systems are divided into accuracy classes:

- 0.5 accuracy class – the systems for loading railway and truck tanks
- 1.0 accuracy class – liquid gas systems

Limiting error of measuring meters (MPE) indications in operating conditions:

- for 0.5 class systems - 0,3%
- for 1.0 class systems - 0,6%

Limiting errors of measuring systems (MPE) indications in operating conditions:

- for 0.5 class systems - 0,5%
- for 1.0 class systems - 1,0%

Values of allowable limiting errors for volume or mass indications of resolver installed on measuring system, shall be contained within limits as for A level.

5.1.3 Realization of measuring systems

Branching of measuring system upstream the meter in case of measuring system for liquid reception is allowable only then, when system design allows for liquid reception only through single pipeline.

Branching of measuring system downstream the meter in case of measuring system for liquid discharge is allowable only then, when system design allows for liquid discharge only through single pipeline.

In measuring system, where exceeding of meter load range happens, flow-limiting device shall be installed.

Relief valves and flow stopping devices that are not connected with measurement, shall be provided with safety valves reducing high pressure in measuring system.

By-pass of measuring meter, which is indispensable in respect of operational considerations, shall be closed by means of blank disk or by means of double closing device with monitoring valve. Such solutions shall be avoided, but if necessary then shall be agreed with GLSA.

Places of protection stamps putting shall be easily accessible. Nameplates of measuring systems shall be durably fastened, and required inscriptions legible and durable.

Measuring system shall be furnished with instrument indicating volume of liquid being measured in measurement conditions.

Application of single indication device for presentation of reading referring to several measuring systems is allowable, on condition that simultaneous reading from arbitrary measuring systems is possible, or that indications concerning specific measuring system are unequivocally designated, allowing for identification of such system, and user can call indication referring to arbitrary system.

Measuring systems destined for loading of truck and railway tanks shall be provided with resolvers, measurements of density, temperature and pressure.

For purposes of measuring lines furnishing, the instruments having type approval shall only be used.

Electronic Control System for Loading Devices (Loading Terminal) shall be agreed with GLSA prior to offering it, and only then submitted for European Notify Body (GUM - Central Office of Measures) approval.

Measuring system, stationary or located on truck cistern and intended for liquid pressurized gases (excluding cryogenic liquids), hereinafter called liquid gas system, shall be connected to vessel by means of rigid pipelines. Between the vessel and meter a check valve shall be built-in. Pressure stabilization device shall be built-in downstream the meter, ensuring flow of liquid phase during measurement performed by the meter.

Measuring system equipped with electronic devices, hereinafter called „electronic measuring system", shall be provided with proofing devices, which task is elimination of errors occurring during specific interferences.

Design of electronic measuring system shall enable presentation of information regarding measured volume or mass, determined in the moment of error occurrence and its detection by proofing device.

Electronic measuring system shall be supplied from UPS system, in order to maintain all its functions in period of basic electrical supply failure, if flow is not interrupted during such failure. If liquid flow is interrupted during basic electric supply failure, then data existing in the moment of supply failure shall be stored and possible to present on indicating device for period sufficient to terminate transaction under way.

Emergency loading (terminal) shutdown in case if dangerous concentration limit of hydrocarbons is exceeded on the plant, shall be designed according to procedure given in specification GLSA 3520 „Gas detectors".

If measuring system is furnished with devices with external memory, destined for storage of measurement results, then they shall be stored in environment ensuring lasting of the data in operating conditions. A space in device memory, sufficient for data storage for three-year operating period shall be provided. After whole device memory is filled, then the data shall be removed in order in which they have been stored, by means of manual operations.

In case when electronic equipment installed on loading lines require, then shall be installed in protective cabinet equipped with overpressure system ensuring proper climatic condition.

Method of information transmission to host system shall conform to specification GLSA 3710 – "Data transmission systems")

5.1.4 Legal metrological inspection

Order of Minister of Economy, Labour and Social Policy of 2 April 2004, on legal metrological inspection of measuring instruments, determines:

1. conditions and mode of measuring instruments reporting for legal metrological inspection
2. detailed implementation mode of legal metrological inspection of measuring instruments

3. patterns of type approval marks
4. patterns and validity periods for evidences of legal metrological inspection.

Legal metrological inspection of measuring instruments can be performed in seat of measures' administration body, legalization point, or in place of measuring instrument installation.

Decision on measuring system type approval can be issued on the grounds of submitted drawings and diagrams of the systems, conforming to model diagrams specified in par. 30, if the system meets metrological requirements.

Confirmation of agreement with fundamental requirements shown in regulation (Dz. U. 2007 nr 3 poz. 27) can be issued based on procedures see paragraph 26 section 1.

In case of measuring system destination for use in particular environmental conditions specified by applicant, and not included in measuring systems' classification, then tests corresponding to those particular conditions shall be performed during type testing of this measuring system.

Testing of resolver shall confirm conversion accuracy of liquid volume in measurement conditions to volume in reference conditions or to mass.

Auxiliary devices, which usage is not obligatory, shall be tested in order to find if they can influence indications of measuring system.

Primary legalization can be performed in two stages, including:

- on the first stage, prior to installation in utilization place:
  1) verification of the meter together with auxiliary devices, for conformity to approved type,
  2) metrological verification of the meter with auxiliary devices;
- on the second stage, after installation in utilization place:
  1) verification of measuring system with meter and auxiliary devices for conformity to approved type
  2) metrological verification of the meter and auxiliary devices in measuring system
  3) functional verification of gas elimination device (if used), without necessity for verification if metrological requirements for this device are met,
  4) adjustments of pressure stabilization devices required,
  5) change of pipeline loading volume in case of measuring system with full hose,
  6) amount of liquid remaining in hose in case of measuring system with empty hose.

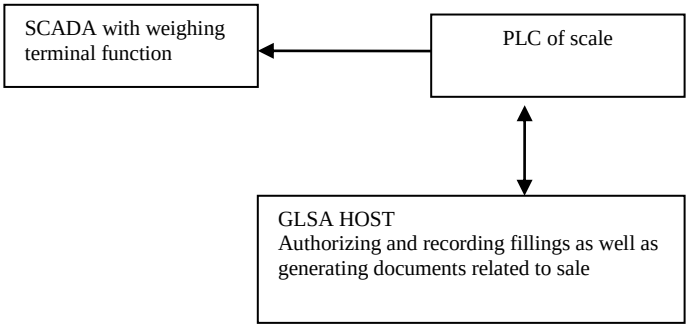
The supplier shall prepare procedure of loading system legalization, and obtain its acceptance in European Notify Body GUM - Central Office of Measures).

### 5.2 Scales

Order of Minister of Economy, Labour and Social Policy of 11 December 2003, applies to non-automatic scales serving for determination of mass. It defines basic requirements for non-automatic scales subject to conformity assessment, conformity assessment procedures, as well as marking method of non-automatic scales. Non-automatic scale, equipped with electronic devices performing specified functions and produced as separate units, which can be separately tested, is called in the order the electronic scale. The order was issued basing on Directive 90/384/EEC (NAWI), related to non-automatic weighing instruments.

If non-automatic scale is made according to harmonized norm PN-EN 45501, then it is supposed that it fulfils basic requirements of above-mentioned order.

Proposed structure of the system:




Metrological requirements

According to Directive 90/384/EEC, two categories of scales are distinguished, depending on use:

The first category includes scales used in area of legal metrological inspection, i.e. for mass determination in commercial transactions, mass for calculation of fair charges, customs duty, taxes, etc.

The second category includes scales used in all remaining domains.

Four accuracy classes of scales were established:

I - special

II - high

III - medium

IV – ordinary

Truck scales and rail weighbridges shall meet requirements as for the first category and III$^{rd}$ accuracy class for static weighing, and 0.2 accuracy class for dynamic weighing. Detailed metrological requirements are given in Minister of Economy, Labour and Social Policy order of 11 December 2003, and Minister of Economy, Labour and Social Policy order of 4 February 2004.

Weighing terminal shall be implemented on a computer, visualising whole loading plant.

5.2.1 Execution of weighing systems

Design and execution of scales shall ensure keeping of metrological properties by scales, if properly installed and used in environmental conditions, for which they are intended.

Electronic scale shall be designed and produced in such a way, so that in case of interference occurrence:

1) significant deviations would not occur, or
2) it shall detect significant deviations in automatic way and demonstrate them by generation of visual or acoustic warning signal, lasting until user would undertake correcting actions, or until deviation would recede.

Connection of peripheral device to electronic scale through adequate interface, shall not influence its metrological properties.

The scales can be equipped with one or more tare devices, and device for preliminary tare weight adjustment, which action ensures proper determination of calculated net value.

The scales shall be constructed in such a way, so that to enable easy execution of statutory inspections.

The following marking, placed in non-removable, legible and well visible in normal operating position of scale way, shall be located on scales:

1. CE mark, and next to it the two final digits of year in which it was affixed, as well as number or numbers of notified bodies, which exercise EC supervision over quality system of manufacturer, or performed EC legalization
2. green, square label of dimensions at least 12.5 x 12.5 mm, with big, black „M" letter overprinted on it
3. factory brand or producer name
4. designation of accuracy class
5. maximum load
6. minimum load
7. value of legalization scale interval.

5.2.2 Legal metrological inspection

Procedures according to Directive 90/384/EEC, with amendments introduced by Directive 93/68/EEC are valid for scales belonging to the first category.

Compliance of scales with basic requirements of directive is confirmed by EC type approval, which entails EC declaration of conformity, EC verification (legalization), or unitary EC verification (legalization).

### 5.3 Loading systems and scales

5.3.1 Loading systems for truck tanks

Annexes N$^{o}$ 2 and 3 show schematic diagrams of loading lines with minimum process equipment and protections, ensuring safe loading with use of measuring lines based on volumetric or mass flowmeters. A preferred solution is mass measurement based on Coriolis principle, with flowmeter having type approval for mass measurement and density measurement. Control system of loading shall be connected to SAP software through refinery system „SPIS", collecting commercial data.

Process equipment of loading line shall be designed according to physical and chemical properties of product being filled in.

Depending on organization of loading, assumptions regarding access control and self-service performed by driver shall be each time defined.

The host system shall realize authorization of loading, i.e. the loading cannot be started without checking of: the driver, the order, the amount to be filled, etc.

5.3.2 Weighing system for railway tanks and truck tanks

Annexes 4 and 5 present block diagrams of loading lines with use of electronic scale as the instrument for settlement and control of loading.

5.3.2.1 Requirements for electronic, non-automatic truck scale (static weighing)

*General requirements*: sunk scale, stationary, serviceless for settlements with customers, III$^{rd}$ accuracy class. All elements of weighing system shall originate from the same manufacturer, being confirmed with adequate certificates. Location of control panel in local control room or container. Local indicator shall be foreseen, visible from the scale platform, entrance and departure road lights, as well as CCTV camera monitoring from local control room.

*Weighing platform*: Steel, or steel and concrete platform of 18 m in length, supported on six load cells, equipped with movement limiters, and with weighing range of 60 tons. Sunk weighing platform, but without deep weighing channel. Sewerage system under platform carried away for two meters outside the contour of weighing platform, for connection to oiled sewerage.

*Load cells*: made of alloy steel, hermetic, connections welded in inert-gas shield, operating temperature minus 25 ºC up to plus 40 ºC, Ex design, IP68, IP69K, resistant to breakdown up to 10 kV (atmospheric discharges). 3-year guarantee period is required.

*Electronics of scale*: adapted for cooperation with systems of LOTOS Group S.A.; connection to „SAP" application software through „SPIS" factory system collecting commercial data. Printers shall have certificate approving for cooperation with weighing system being supplied.

*Electrical accessories:* design appropriate to classification of explosion hazard zones and in special version resistant to humidity. Integrated protection system against atmospheric discharges is required.

*Certificates:* All certificates required by project, and certificates according to directive 90/384/EEC and harmonized norm PN-EN 45501, regarding sensors, cabling and electronic system shall be delivered along with the offer.

The Supplier shall ensure local service, with response time not longer than 12 hours.

The Supplier shall complete specialized erection and perform legalization of scale, providing necessary tools and materials as well as transport means.

5.3.2.2 Requirements for electronic, non-automatic rail weighbridge (static or dynamic weighing)

*General requirements:* foundation type scale, stationary, for settlements with customers, III accuracy class for static weighing, 0,2 for dynamic weighing, train speed during weighing conforming to the scale supplier requirements. All elements of the weighing system shall originate from the same manufacturer, being confirmed with adequate certificates. Location of control panel in local control room or container.

*Weighing platform:* Sectional or two-bridge platform with eight load cells for static or dynamic weighing, of 16 m in length. Depending on length of railway cars used, and train speed during weighing, equipped with movement limiters and range of weighing 100 up to 150 tons. The foundation must have effectively acting drain of rainwater and oil contaminated water. Technical details regarding the weighing platform shall be agreed with GLSA.

Requirements regarding load cells, electronic system of scale, electrical accessories and certificates, the same as for truck scale.

5.3.3 Environment protection

A company designing loading device or loading plant, shall consider in detail hazards, taking into account physical and chemicals properties of products, location of loading devices, type of loading system, and shall propose adequate number of sensors for air and underground water pollution monitoring (measuring wells).

The loading system shall be leakproof, and vapours adequately carried away to system of vapours recovery. Vapour recovery system shall constitute package plant with own control system, located in local cabinet or control room. Loading control system shall control its starting or stopping.

## 6 Relevant documents

Any "Technical Specification" issued by GRUPA LOTOS S.A. listed in Contract Files.

## 7 Standards and regulations

Designing, manufacturing and assembly shall conform to latest editions of standards and regulations given below.

Only specific standards, connected with weighting and loading systems are quoted here. Remaining standards concerning Instrumentation are given in specification GLSA 3010 – Instrumentation general requirements.

**Dz. U. (Official Journal )**

Dz.U. 2006 nr 249 poz. 1834 (z późniejszymi zmianami) - Ustawa z dnia z dnia 15 grudnia 2006 r. o zmianie ustawy o systemie oceny zgodności oraz o zmianie niektórych innych ustaw.

Dz.U. 2008 nr 3 poz. 13 (z późniejszymi zmianami) - Rozporządzenie Ministra Gospodarki z dnia 27 grudnia 2007 r. w sprawie rodzajów przyrządów pomiarowych podlegających prawnej kontroli metrologicznej oraz zakresu tej kontroli.

Dz. U. 2007 nr 3 poz. 27 – Rozporządzenie Ministra Gospodarki z dnia 18 grudnia 2006 w sprawie zasadniczych wymagań dla przyrządów pomiarowych.

Dz.U. 2008 nr 5 poz. 29 (z późniejszymi zmianami) - Rozporządzenie Ministra Gospodarki z dnia 7 stycznia 2008 r. w sprawie prawnej kontroli metrologicznej przyrządów pomiarowych.

Dz.U. 2005 nr 243 poz. 2063 - Rozporządzenie Ministra Gospodarki z dnia 21 listopada 2005 r. w sprawie warunków technicznych, jakim powinny odpowiadać bazy i stacje paliw płynnych, rurociągi przesyłowe dalekosiężne służące do transportu ropy naftowej i produktów naftowych i ich usytuowanie.

Dz.U. 2011 nr 208 Poz. 1242 - Rozporządzenie Ministra Infrastruktury z dnia 23 września 2011 r. zmieniające rozporządzenie w sprawie warunków technicznych dozoru technicznego, jakim powinny odpowiadać urządzenia do napełniania i opróżniania zbiorników transportowych.

Dz.U. 2004 Nr 4 Poz. 23 - Rozporządzenie Ministra Gospodarki i Polityki Społecznej z dnia 11 grudnia 2003r. w sprawie zasadniczych wymagań dla wag nieautomatycznych podlegających ocenie zgodności.

Dz.U. 2009 nr 104 poz. 863 - Rozporządzenie Ministra Gospodarki z dnia 9 czerwca 2009 r. w sprawie wymagań, którym powinny odpowiadać wagi wagonowe do ważenia w ruchu wagonów, oraz szczegółowego zakresu sprawdzeń wykonywanych podczas prawnej kontroli metrologicznej tych przyrządów pomiarowych.

**Directives of European Community**

| | |
|---|---|
| 2004/22/WE (MID) | Directive of 31.03.2004. Measuring instruments. |
| 90/384/EEC | Directive of 20.06.1990. Non-automatic weighing instruments. |
| 93/68/EEC | Directive of 22.07.1993 amending Directive 90/384/EEC. |

2009/23/EC (NAWI) Directive 2009/23/EC of the European Parliament and of the Council of 23 April 2009 on non-automatic weighing instruments (Codified version) (Text with EEA relevance) (NAWI)

**PN (Polish Standards)**

PN-EN 45501 Metrological aspects of non-automatic weighing instruments

**Other standards**

OIML R60, R76, R117 - Recommendation of the International Organization of Legal Metrology

## 8 Enclosures

Hypothetical diagrams of loading lines of various hardware configuration and destination:

- Enclosure No: 1 - Requirements regarding documentation
- Attachment No: 2 - Loading line for station with bottom or top loading
- Attachment No: 3 - Loading line for station with bottom and top loading with three-way valve
- Attachment No: 4 - Weighed loading for railway tanks
- Attachment No: 5 - Truck tanks loading

## 9 Record of changes

| No. | Date | Description | Introduced by |
|---|---|---|---|
| 1 | 30-11-2013 (rev. 1) | Review, update, standardize and changes to the Standard within scope of order No. OK/990/2012 | Editorial board coordinated by T.Wróbel |
| - | 31-08-2015 | Page layout corrections, no contents changes. | T. Wróbel |

| Grupa LOTOS S.A. | **Enclosure No. 1** | Spec. N$^{o}$ 3470 |
|---|---|---|
| | **Requirements regarding documentation** | |

| | WITH OFFER | ON DELIVERY | NOTES |
|---|---|---|---|
| TECHNICAL SPECIFICATION OF MANUFACTURER | Yes | Yes | |
| LIST OF DISCREPANCIES TO SPECIFICATION FOR TENDER QUERY | Yes | | |
| LIST OF SPARE PARTS TOGETHER WITH PRICES, RECOMMENDED FOR 2-YEAR OPERATION | Yes | | |
| LIST OF SPARE PARTS FOR PERIOD OF PRECOMMISSIONING AND COMMISSIONING | Yes | | |
| CERTIFICATES OF TESTS | | Yes | if specified |
| MATERIAL CERTIFICATES CONFORMING TO PN-EN 10204 3.1 | | Yes | if specified |
| COMPLIANCE CERTIFICATES FOR OPERATION IN EXPLOSION HAZARD ZONE | Yes | Yes | if applicable |
| CERTIFICATES ISSUED BY APPROPRIATE INSTITUTION FOR EQUIPMENT DESTINED FOR SETTLEMENT MEASUREMENTS | Yes | Yes | if applicable |
| DIMENSIONAL DRAWINGS | Yes | Yes | |
| DIAGRAM OF ELECTRICAL WIRING | Yes | Yes | |
| ERECTION, OPERATION AND MAINTENANCE INSTRUCTIONS | | Yes | |
| ELECTRONIC VERSION ON CD DISK | | Yes | |
| INSPECTION BOOK | | Yes | If specified |
| PRODUCTION QUALITY PLAN | | Yes | If specified |
| DECLARATION OF CONFORMITY TO DIRECTIVE OF EUROPEAN UNION (CE MARK) ISSUED BY MANUFACTURER | Yes | Yes | |
| MANUFACTURER CERTIFICATES | Yes | Yes | if specified |
| CALIBRATION CARDS | | Yes | if specified |
| HYDROSTATIC TEST REPORT | | Yes | if applicable |